

Exhibit

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Healthy Regions + Policies Lab

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Our Mission

HeRoP is a lab integrating innovative GIScience, public health, and statistical approaches to explore, understand, and promote healthy regions and policies.

Our group is dedicated to *Open Science* and open source methodology & applications. We are committed to research translation for policy & public use. Each project has both a research and applied component. We also provide research experiences in spatial and computational thinking for students, extending learning in the classroom to the complexity of raw research.



Research Themes



Defining how place impacts & interacts with health

Our research centers on how "place" impacts health outcomes in different ways, for different people, with a focus on distilling vulnerability and exposure hypotheses. We focus on complexity surrounding the measurement, mapping, and distillation of multiple health outcomes and associated social determinants of health at varying scales, from residential clinical population to population characteristics for a large city over time, to facilitate a greater understanding of disease prevalence.

Identifying disparities of access and health outcomes

In collaboration with clinical and public health teams, we explore the relationship of accessibility as a function of health outcomes, from food access disparities to availability of evidence-based medications for opioid use disorder.

Often disparities are confounded and/or mediated by place-based factors, like historical redlining practices and hypersegregation, and require a more nuanced approach for analysis.



Building engaged, participatory infrastructures

In public health informatics, providing the "right" data at the right time necessitates a participatory, community engaged process to ensure equity. We collaborate with community coalitions, clinical partners, and health departments in establishing participatory infrastructures for various scenarios. We've worked with multi-institutional teams to consolidate, organize, and open community resource data and neighborhood-level air quality data. We develop community-engaged, customized web mapping applications for visualization and exploration of resources for both expert and community use.

Improving methods to account for spatial patterns

With health inequalities increasing across major urban environments and potential place-based inequities under scrutiny, understanding treatment impacts across populations has become essential to local government and health department policy. Spatial interaction and heterogeneity between units at individual or group levels can violate core components of the standard counterfactual framework used for evaluation, making treatment effects difficult to assess.



Characterizing social-spatial risk environments that interact with and drive syndemics

Disparities in resources and health outcomes can be viewed as a function of complex sociological phenomena that result in nuanced patterns reflecting underlying social and



spatial inequities. A social-spatial perspective may provide insight into better understanding the complex factors that drive treatment heterogeneity for health outcomes within communities, and justify more spatialized approaches for evaluation of efficacy.



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